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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,884	10/29/2003	Koji Kanda	1560-0401P	4111

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

MCCLLOUD, RENATA D

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,884

Applicant(s)

KANDA, KOJI

Examiner

Renata McCloud

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The objection to the drawings being labeled "prior art" has been withdrawn by the examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Discenzo (US 6097286) in view of Kurishige et al (US 6161068).

Claims 1 and 11: Discenzo teaches a steering apparatus (Fig. 1) which uses a steering motor (28) to supply a steering mechanism with force corresponding to a steering amount applied to a steering member (22), comprising: a reaction force motor (Fig. 1:38); a torque sensor (Fig. 1:36) sensing the steering motor torque; a means for filtering a component within a frequency range out of the sensed torque (Col. 2: 54-65); and driving the reaction force motor (38) so as to supply the steering member with a force corresponding to the extracted component and the steering amount (Col. 2:54-3:10). Discenzo does not teach a current sensor. Kurishige et al teach a current sensor (9) and that torque is proportional to current (Col. 1:44-54). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Discenzo to sense current as taught by Kurishige in order to provide an assist torque to the motor and reduce discomfort to the driver.

Claim 21: Discenzo teaches a steering apparatus (Fig. 1) which uses a steering motor (28) to supply a steering mechanism (30) with force corresponding to a steering amount applied to a steering member (22), comprising: a steering motor (28); a reaction force motor (Fig. 1:38); a torque sensor (Fig. 1:36) sensing the steering motor torque; a means for filtering a component within a frequency range out of the sensed torque (Col. 2: 54-65); and driving the reaction force motor (38) so as to supply the steering member with a force corresponding to the extracted component and the steering amount (Col. 2:54-3:10). Discenzo does not teach a current sensor. Kurishige et al teach a current sensor (9) and that torque is proportional to current (Col. 1:44-54). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Discenzo to sense current as taught by Kurishige in order to provide an assist torque to the motor and reduce discomfort to the driver.

Discenzo and Kurishige et al teach the limitations of claims 1 and 11. Referring to claims 2-10 and 12-20:

Claims 2 and 12: Discenzo teaches a controller for amplifying the extracted component (Col. 2: 54-65).

Claims 3 and 13: Kurishige et al teaches a fixed amplification factor (col. 6:8-15, a control gain).

Claims 4, 8, 14, and 18: Kurishige et al teach a controller (20) amplifies (6) the component with an amplification factor that increases and decreases based on speed (Fig. 9a).

Claims 5, 6, 15, and 16: Kurishige et al teaches the filtering range is between 3-15 hz (Col. 5:44-48).

Claims 7, 17: Kurishige et al teach the range is fixed (Col. 5:44-48).

Claims 9, 19: Kurishige et al teach the controller sets a target force; adds the target value of the force to the extracted component, wherein the controller drives the motor based on the addition (Col. 6:8-18).

Claims 10, 20: Discenzo teaches the steering member (Fig. 1: 2) and mechanism (Fig. 1: 30) are not mechanically connected (Col. 1:19-25,41-44).

Response to Arguments

4. Applicant's arguments filed 11/14/2005 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both Kurishige et al and Discenzo et al teach power steering systems for motor vehicles. Both systems have torque sensors providing torque feedback to the power steering system (Kurishige et al col. 1:44-54 and Discenzo et al col.2:54-3:11) which allows a reduction in the discomfort of the driver (Kurishige et al col. 2:30-35 and Discenzo et al col. 3:11-18). The examiner did not refer to the entire teachings of Kurishige. The examiner relied on Kurishige as a teaching reference to show that it is well known in the art that torque and current are proportional, as described in the background of the invention.

In response to applicant's argument that it would not be obvious to combine Kurishige et al and Discenzo et al, the test for obviousness is not whether the features of a secondary

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reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

The examiner did not refer to the entire teachings of Kurishige. The examiner relied on Kurishige as a teaching reference to show that it is well known in the art that torque and current are proportional, as described in the background of the invention. One having ordinary skill in the art knows that torque and current are proportional, in that, if one knows the torque, one also knows the current, and vice versa.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Renata McCloud
Examiner
Art Unit 2837

RDM

A handwritten signature in black ink, appearing to read 'D. Martin', with a stylized, overlapping 'M'.

DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2